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4 January 1967

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AUTOMATIC REPORTING TECHNIQUES AND EQUIPMENT STUDY
DEVELOPMENT OBJECTIVES

1. INTRODUCTION.

This document presents the objectives of a Government sponsored program to study the NPIC reporting process and graphic arts composition and recommend techniques and equipment to assist in the composing, editing, production, and dissemination of reports and graphics.

2. BACKGROUND.

At NPIC photographic interpretation reports and other intelligence reports and graphics are prepared and published within rigid deadlines [redacted]. Many of the problems 25X1 associated with the creation of these publications and graphics (deadlines, editing, format, illustrations, etc.) are similar to those encountered by newspaper and magazine publishers. Other problems are unique to the intelligence field. The photo interpreter is not trained in journalism and his contribution to the report may require considerable editing.

2.1. Types of Reports. There are approximately 30 different types of reports that are published periodically at NPIC. It is not the intent of this document to describe each report in detail. In fact, one of the objectives of this study will be to become familiar with the content, format, and editing procedures for these reports. A study was recently completed on the functions of the NPIC divisions. Portions of the results of this study are applicable to report production and will be made available to the successful bidder.

In addition, the successful contractor will be free to consort with NPIC personnel to obtain pertinent information. There are a wide variety of reports, but generally those produced at NPIC fall into three classes: immediate, detailed and summary.

2.1.1. Immediate Reports. The first part of the immediate report is written within twenty four hours after the receipt of photography. The interpreter scans the photography for significant changes in previously reported areas or new areas containing information of an intelligence value. This information is written on forms, approved, edited, typed on punch cards, and then compiled and printed by a computer. Print out is in all capital letters, double spaced, and with no line justification. Words are not hyphenated. The report is then proofread, errors corrected and then re-printed.

2.1.2. Detailed Reports. The detailed report allows the interpreter to interpret a selected area or areas in more detail, to prepare sketches and annotated photographs and to obtain as much information from the photography as possible with the aid of collateral information on the area. These reports are much more time consuming in terms of man-power expenditrues per published page. However, type, style, and size can be varied, graphics are more detailed and more numerous, and lines are justified. Included in this category are also technical reports on evaluation of photography, quality of color film, etc.

2.1.3. Summary Reports. The summary report compiles information of a certain type or category that has been previously reported (in immediate or detailed reports) during a specified period (for example, a six month summary of airfields photographed from January thru June 1965). These reports take the format of detailed reports or immediate reports.

2.1.4. Report Size. The number of copies of a particular report is usually small, seldom exceeding ~~more than~~ 200 ~~copies~~. Reports vary in size from 8 X 10 1/2 to 16 X 25 inches and contain from one to 700 pages. Most reports are of the 8 X 10 1/2 size and average about 40 pages.

2.2. Types of Graphics. Graphics fall into four basic categories: briefing boards; illustrations included in reports; slides, viewgraphs or other projected graphics; and miscellaneous graphics used for bulletin boards, employee handouts, etc.

2.2.1. Briefing Boards. Briefing boards are usually from 22" X 30" to 30" X 44". Type Style is usually Futura Semi-Bold from 18 to 60 point size. These graphics are often annotated photographic enlargements. Annotations include north arrows, arrows, lettering, etc. Other briefing boards include line drawings, program outlines, bar charts, and many other forms of professional art work.

2.2.2. Report Illustrations. Illustrations used in reports include annotated photographs, line drawings, perspective drawings, etc. Occasionally a briefing board is reduced and inserted as an illustration in a report. Often these drawings are true works of art, and are time consuming to produce because of their accuracy and completeness.

2.2.3. Slides and Viewgraphs. Viewgraphs are 10 1/4" high by 14 3/4" in the horizontal dimension. Type Style is Alternate Gothic No. 1 with size varying from 14 to 30 point. Teleprompter slides are prepared on a 7 7/16" X 9 7/8" wide area and then reduced to approximately one-third the size. The size of the ~~gloss~~ glass mount is 3 1/4" high by 4" wide.

Style is Alternate Gothic No. 1 and size used on the unreduced format is from 14 to 30 point.]

2.2.4. Miscellaneous Graphics. Other graphics include safety posters, bulletin board announcements,, employee handouts, etc. Their composition is extremely varied but their importance is limited in relation to other described graphics.

2.3. Communications. One of the more time consuming facets of report publications involves communications, or the transmittal of each report or portion of a report from author to editor, or from one approving source to another. Often corrections prescribed by one authority require concurrence from another authority having previously edited or approved the manuscript. Therefore, one of the prime considerations in this development should be the capability of the system to rapidly transmit ~~page or graphic format~~ information from one physical location in a building to another.

3. CONCEPT.

The Contractor will study the reporting cycle including the writing, editing, approving, graphics preparation, and production of all intelligence reports produced at NPIC. He will suggest techniques and equipment to produce these reports faster and with higher quality composition. Consideration should also be given to future production requirements. ~~A system has been conceived to accomplish the objectives of speed and quality. An outline of this system is presented herein to establish a reference point for further discussion. The Contractor will be free to suggest improvements to or alternates to this system. The listed components and their brief descriptions are not be construed as specifications for equipment. In fact, one of the requirements of~~

the contractor will be to furnish complete specifications for all system hardware and software.

3.1. Integrated Reporting of Intelligence System (IRIS). This system is designed to accomplish the objectives of producing reports of high quality composition within the shortest practical time period. It is to be constructed of equipment that is commercially available or quickly developable to allow the implementation of this system in the near future. It allows for rapid initial production, approval, editing, and entry of intelligence information into a computerized information system. It also compiles, and photocomposes the information to produce a high quality format presentable to the production services. In addition, it allows for the printing and production of the information into a professional looking report reflecting the importance of the information contained therein and the professional talents used to create it.

3.1.1. The IRIS ~~consists~~ of the following components:

a. CRT alphanumeric data display and entry device. This unit will consist of a keyboard and CRT. The keyboard should have functional keys as well as alphanumeric keys. There should be ~~at least 68~~ sufficient alphanumeric keys and enough functional keys to accomplish the requirements of initial entry, editing, approving, etc. The CRT should have the capability to display a message of at least 1000 characters.

b. Communications Systems. This subsystem will consist of equipment needed to transmit information from one data display and entry device to another. At first, only interbuilding communications will be needed with the maximum distance between devices being 700 feet. Provisions will be made for future interbuilding communications.

c. Photo Composing Equipment. This equipment shall be capable of rapid high quality photocomposition of at least eight styles of characters from 5 to 18 point sizes and ideally up to 72 point size. Line length shall preferably be at least 7 1/2 inches, and composing speed shall be at least 30 characters per second. If necessary, composition of larger point sizes (20 points and higher) can be slower.

d. Production equipment. A considerable number of presses are already in existance at NPIC. Therefore, new equipment will be needed only if the output media of the photocomposing equipment is not compatible for direct application to prevent production equipment or if future reproduction loads predict additional equipment.

e. Data Processing Equipment. At NPIC there will be available two Univac 494 computers plus associated equipment. It is anticipated that any need for digital storage or processing can be handled by this equipment. However, if necessary, small special purpose computers may be used.

f. Software. All programs necessary for equipment use and integration will be outlined by the Contractor. The Contractor will furnish advice as to the type and extent of programming that will be necessary and will suggest sources from which programming can be supplied. Some programming will be furnished by in-house personnel. The Contractor will not be responsible for furnishing detailed programs.

3.1.2. The IRIS will function as follows:

a. Message Composition. The analyst will compose short intelligence messages on the CRT of the data display and entry device. Every assistance must be given to the analyst to speed his entry of the data since he is not trained as a typist. He will enter all capital letters and will not use punctuation. Any errors can be easily erased and corrected. By pressing an appropriate function key and typing the first two letters of a computer stored word, the computer will search a stored vocabulary of selected, most often used words and will automatically type the rest of the word. Also certain standardized, often used phrases and sentences can be stored in the computer memory. When satisfied with the message the analyst then sends it to a working memory of the computer where it is assigned a message number.

b. Message Approval. The message is now available for review by the branch chief. If the message is of immediate importance, the branch chief will be notified by a signal from his data display and entry device and is informed of the message number. Other messages can be recalled by the branch chief at his convenience. However, after a specified time delay without being recalled, the data display and entry device will inform the branch chief of the back-log of messages that need approval. After reviewing each message and making necessary corrections and revisions, the chief approves the message and re-enters it in the computer working memory. If necessary, other approvals by higher authorities will be accomplished in

similar fashion.

c. Message Editing. An editor will review each approved message using a recall procedure similar to the branch chief's. He will correct all grammer and spelling and improve composition if necessary. He will capitalize and punctuate as necessary. If some doubt exists as to the message content he can use use a secure means of communication to phone the branch chief and the analyst and discuss any changes. Each person can simultaneously view the message and resolve any questions. The editor will also enter any special signals to the message so as to change the type, style, size, etc., if desired changes are required in the printed report. The editor enters the approved edited message into an information memory where it is now available for transmittal (but not alteration) to all authorized persons.

d. Photocomposition. At selected intervals of time or number of messages, the photocomposition equipment will compose the message, compiling them under appropriate categories. If available, higher speed composition will be used for proof copies and a lower speed but higher quality composition will be used for final copy.

e. Production. The production department will be furnished photocomposed copy and separately furnished graphics copy and will convert it into proper format for use on copying equipment.

f. Dissemination. The physical dissemination of reports is of such a nature that it demands the use of trained personnel practicing secure techniques. The contractor will be required to take only a cursory glance into this facet of the reporting cycle.

A program for the electronic transmission of computerized intelligence information is already underway at NPIC and the successful contractor must co-ordinate his efforts with this program. However, the contractor will not have the primary responsibility for this type of transmission.

g. Briefing Boards. It is anticipated that IRIS equipment can assist in making simple textual briefing boards. Text can be entered on the data display and entry device, photocomposed in large type size and pasted onto the briefing board. An alternate scheme is to compose the entire briefing board on the data display and entry device, photocompose it in smaller type size so that it all fits onto one page and then photographically enlarge the page to briefing board size.

3.2. Automatic Graphic Composition. There are techniques and equipment available today to automatically compose (on a CRT or in hard copy,) simple line drawings, to rotate drawings in space, to produce color drawings, and to automatically or semi-automatically construct other graphical compositions. It is felt that most of these techniques and equipment are still in a state of development and are presently not suited for economic usage ~~for economic usage~~ for composing graphics needed at NPIC. However, it is NPIC's policy to be kept aware of the latest advances in this field and to even consider

sponsoring the development of such equipment when this development shows indications of fruitful implementation into the reporting of intelligence. Therefore, it will be the contractor's task to review the field of automatic graphics composition and to suggest equipment or concepts that can be purchased or developed for use at NPIC. Consideration shall be given to equipment that can automatically insert continuous tone photography onto a page, allow for page format manipulation by an editor, and allow line drawing composition.

4. SCOPE.

The total program will be divided into the following three interrelated phases. Proposals solicited hereunder are to be restricted to the tasks outlined in Phase I and Phase II. Phase III is included as a matter of information and as an aid in developing the material required under the other phases.

4.1. Phase I, Investigation and Analysis. The contractor will thoroughly investigate and analyze current reporting and graphics composition procedures at NPIC, determine present and future requirements for quality and quantity, determine the suitability of the IRIS for meeting future report and graphics quality and quantity requirements, alter the IRIS ~~system~~ or suggest new or alternate systems to accomplish these requirements, and evaluate the IRIS or alternatives in accordance with the criteria outlined in Paragraph 5.1.

4.1.1. The conceptual plans shall include recommended solutions to the reporting and graphics composition requirements identified during the investigation, and as a minimum must consider the following problem areas:

a. The advisability of using a CRT alphanumeric data display and entry device as an aid in composing, editing, approving and retrieving intelligence information.

b. Means of improving the speed and accuracy of transmitting intelligence information from one location to another.

c. Means for increasing the speed and quality of composition of reports.

d. Methods of increasing report production capabilities, giving due regard to probable increases in production requirements.

e. Use of hyphenated or hyphenless line justification, column widths and lengths, type fonts, report formats, and other aspects of publication needed to produce quality reports.

Cost Effectiveness

4.2. Phase II, System and Equipment Definition. Based on the conceptual plan resulting from the Study in Phase I, alternate techniques for implementation of the conceptual design will be developed and evaluated. The report on this phase will include a thorough analysis and comparision of all alternatives considered. The report will be both quantitative and qualitative in measuring one proposed alternative against the other and in demonstrating the amount of improvement each alternative could achieve over the present system. A detailed system plan based on the selected alternative shall be prepared & ~~and should~~ include system and equipment parameters, implementation time, impact on the operational components of the Center, personnel and personnel

training requirements, and the estimated costs of the proposed system for development, installation, and operation. It is possible that because of the large difference in types of reports to be handled that the system may consist of a number of sub-systems. It is also possible that one system may be incorporated to provide an early solution to present problems while a second system may be contemplated for long term future needs. If more than one system is suggested the contractor must clearly distinguish the role and function of each system or subsystem, evaluate each separately and clearly, and demonstrate their integration as appropriate.

4.3. Phase III, Equipment Development, Acquisition and Installation. Utilizing the specifications generated under Phase II, it is the intent of the Government to solicit proposals for a modern intelligence reporting system. Proposals will include equipment modification, development, phase-in, installation, check-out, and training of personnel. It should be reiterated that Phase III is discussed here for information and guidance only and is not to be included in the proposal.

5. REQUIREMENTS.

5.1. Phase I Objectives. Two major reports stemming from the Investigation and Analysis Phase (Paragraph 4.1.) are to be delivered. The first report is to cover the contractor's analysis of NPIC processes and the identification of requirements for reporting and graphics techniques utilized by NPIC. The second report is to present the alternate conceptual designs generated by the contractor to meet the identified requirements. In developing the alternative conceptual designs the following criteria will be utilized for evaluation purposes. Current procedures shall also be evaluated, utilizing these criteria, so that judgment can be made as to the amount of improvement the implementation of the proposed concepts are designed to achieve.

a. System Performance. Time from beginning of entry of information into system until it is available to a user in hard copy form or available through query from computer.

b. Reliability. Consistency of expected performance and ability of system to perform major functions in event of individual component failures.

c. Ease of Phase In. An indication of the amount of disruption of Center activities during implementation of the system.

d. Expansibility. Difficulty (time and cost) of adding to the system to meet increased demands.

e. Flexibility. Ability of system to handle new or unexpected demands, including increased distance of information transmission.

f. Compatibility. A measure of the ability of the system to function harmoniously with the automated and non-automated systems within and external to the Center.

g. Report and Graphics Format. Readability, quality, and professionalism conveyed by form, style, etc. of reports and included graphics.

h. Facility Requirements. The need for unusual site preparation, utilities, communication circuits, etc.

i. Personnel Requirements. The number and skill types required for system operation.

j. Total System Cost. This includes all initial and operational costs. Initial implementation costs should be separated from the predicted annual operating costs.

k. Computer Requirements. The amount of existing computer storage and operating capacity required by the system.

5.2. Phase II Objectives. Three reports are to be delivered under the System and Equipment Definition Phase (Paragraph 4.2). The first report covering item (a) below, will include the comparison of alternates mentioned in Paragraph 3.1.2 and will utilize the same criteria (Paragraph 4.1.1) for comparison specified for the concepts in Phase I. The second report covering item (b) below will be such that it is suitable for use on a basis of a request for a proposal directed toward Phase III (Paragraph 3.1.3) without extensive rewrite or modification. The third report will cover item (c) below.

a. Development and evaluation of alternate methods for accomplishing the functions of the system defined by the conceptual design resulting from Phase I. Alternate methods for accomplishing the major subsystem tasks will be evaluated and reported upon, as well as alternates for accomplishing the overall system functions.

b. Establishment of a detailed system configuration, including overall operation, description and detailed specifications of system components, and component interfaces. Detailed specifications ~~should~~ shall be divided into logical subsets to permit use of multiple sources of procurement for Phase III.

c. Preparation of a detailed implementation plan (PERT) for the system. Budgetary costs and schedules for procurement and installation of equipment, facilities preparation, system testing, and personnel training ~~should~~ shall be included.

6. GENERAL.

6.1. Proposals. The proposals shall be comprehensive, well organized, concise, and limited in content to that information required to qualify the prospective bidder and demonstrate ability to perform satisfactorily within the scope of this document. The format of the proposal shall be arranged to separate company and personnel qualification sheets from the main body of the proposal.

6.2 ~~6.1.1~~. Delivery. While it is the wish of the Government to accomplish the aims of this program as expediously as possible, sufficient time shall be allotted for a thorough and complete accomplishment of the aims set forth herein. Tentatively it is envisioned that the following time spans will be allotted to the various phases.

Phase I - Four months (Report covering NPIC analysis to be delivered after two months. See Paragraph 5.1).

Phase II - Three months to six months

6.2.1 ~~6.1.1.1.~~ Adequate time (approximately four weeks) shall be allowed for Government review and checking following the issuance of each report (both interim and final), required under this program since in each case the content of the reports will form the basis for subsequent work.

6.2.2 ~~6.1.1.2.~~ As a result of Government review, a limited amount of revision and rewrite may be required. Proposals submitted hereunder shall include provisions for this contingency.

6.3 ~~6.1.2.~~ Costing. Cost proposals shall be presented in such a manner that the cost of Phase I can be readily separated from the cost of Phase II.

6.4 ~~6.2.~~ Program Interface. Although the work to be performed under the terms of this document is confined to the development of a reporting and graphics system, interfaces will exist between this program and other studies underway within NPIC. It is anticipated that liaison between the contractor selected for this program and the contractors conducting related internal studies will be such that this program will result in a compatible and and integrated system.

6.5 ~~6.3.~~ Administration. The Government will retain overall control of this program. Written approval from the contracting officer must be obtained before any changes in objectives, costs, or priorities are effected or before any subcontractor or consultant is employed.

6.6 ~~6.4.~~ Contractor Responsibility. The contractor is expected to provide competent and cooperative administrative service. He will be vested with certain authority to control the direction and degree of technical effort within the bounds of the estimated costs. As a part of his overall responsibility, the contractor will be responsible for the work performed by all of his subcontractors and consultants. The fact that the Government has granted approval of the use of a specific subcontractor or consultant (See Paragraph 6.3) in no way relieves the contractor from this responsibility.

6.7 ~~6.5.~~ Technical Representatives. The contracting officer will designate a technical representative to authorize specific development efforts of the contractor. Such authorization shall be given in writing in its original form or in confirmation of an oral authorization. The contractor will accept no other authorization except that of the technical representative or contracting

officer.

6.8 ~~6.6~~. Reports. Regular reports will be required throughout the life of the contract. All reports will meet the basic requirements of specification DB-1001, dated 31 August 1966, GENERAL REQUIREMENTS FOR CONTRACTUAL DOCUMENTATION, attached hereto.

8 ~~6~~.1. Monthly Progress Reports covering each specified phase or subphase of this program will be submitted.

8 ~~6~~.2. Final Reports will be submitted as indicated and will contain the information described under each Phase of this program.

8 ~~6~~.3. Detailed Specifications submitted under Phase II will conform to documentation standards mutually agreed upon by the Technical Representative and the Contractor.